Nevada Department of AGRICULTURE
350 Capitol Hill Avenue Reno, Nevada
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Pest Alert

Light Brown Apple Moth
"LBAM"

The light brown apple moth (*Epiphyas postvittana* (Walker) (Lepidoptera:Tortricidae), a pest of many crops and ornamentals, was recently detected in several counties in California. This moth is originally from Australia and has never been found in the continental U.S. before now. It has become established in the British Isles, Hawaii, New Caledonia, and New Zealand. This moth is of particular concern because of its broad host range and ability to survive in a wide variety of climates.

Because Nevada receives shipments of nursery stock from growers located in California counties where LBAM has been detected, this pest is of concern to the Nevada Department of Agriculture.

LBAM is reported to attack more than 120 plant genera in over 50 families. Plants that may be damaged in Nevada include alfalfa, apple, blackberry, *Brassica* spp.(broccoli, cabbage, mustard, etc.), clover, cottonwood, grape, poplar, potato, raspberry, willow, and even young conifer growth (pines).

LBAM feeding can damage or kill seedlings and affect the appearance of ornamental plants. It attacks many important orchard and field crops, including apples, blueberries, cherries,

grapes, peaches, and strawberries by damaging leaves and fruit. It has been reported as an economic pest of apples and grapes in New Zealand and Australia.

The moth's presence in Nevada would likely lead to restrictions on shipping of plant material inter and intra state. Several countries, including Chile, Peru, South Africa, and South Korea, list LBAM as a quarantine pest and Canada lists it as a noxious pest. To monitor for the presence of LBAM in Nevada, the Nevada Department of Agriculture will be placing traps in high risk areas this year.

Most interceptions of LBAM have been associated with international passenger flights. Fresh fruits and vegetables can harbor viable eggs and larvae. Since egg masses are particularly difficult to find,

nursery stock and other live plant material can also transport the pest. Due to their attraction to lights, adults may be transported by aircraft.

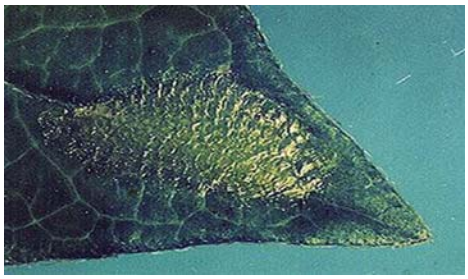
Signs of Infestation:
-Young larvae and webbing on the undersides of leaves near midrib or large veins
-Egg masses on leaves
-Irregular brown areas on fruit surface
-Rolled leaves bound with silk

Identification
Adults, larvae, and other life stages are very similar to other Tortricid species and are difficult to identify. As a result, reliable identification can only be performed by a trained entomologist. The moth is approximately 8 – 10mm long, which is just over half the size of a dime.

Detection
Detection of eggs and larvae on host material is difficult. Egg masses are very small and range from green to brown in color, making them difficult to spot. Early stages of larvae are small and may feed on the underside of leaves, under the calyx of fruit, and less commonly, they can bore into the fruit making detection difficult. Fruit damage is usually restricted to the surface causing irregular brown patches resulting in scarring of the fruit.

Pheromone lures are available to trap and detect adult males. Adults of both sexes will come to blacklight traps.

Life Cycle
Egg masses contain up to 50 eggs and are generally laid on leaves, although they are sometimes laid directly on fruit. Each egg is approximately 1mm in diameter. The masses are small, flat, and eggs overlap like shingles. They range in color from green to brown.



Egg Mass
Image used with kind permission of HortNET, a product of The Horticulture and Food Research Institute of New Zealand Limited.

Early instar larvae feed under a silk shelter they create on the underside of leaves. Later instars often create a rolled leaf shelter tied with silk, typical of this family. They will feed on all parts of the leaf except the major veins. The white to pale green larvae pass through five to seven instars and grow to approximately 2cm in length.

5th Instar Larva
By S. Turner, HortResearch. http://upload.wikimedia.org/wikipedia/en/a/a4/Eposlarvae.jpgp

Over-wintering occurs in the larval stage. The pupal stage lasts two to three weeks inside the shelter of rolled up leaves. Adults fly at dusk and oviposition (egg laying) takes place during the day. Oviposition begins when females are two to three days old and can last 21 days. Females can lay over 1,000 eggs, although 100 to 500 is more typical. Up to four generations can occur in warmer regions of Australia.

References:

The Horticulture and Food Research Institute of New Zealand Limited. 1998. HortFACT: Light brown Apple Moth Life Cycle.http://www.hortnet.co.nz/publications/hortfacts/hf401003.htm accessed April 4,2007.

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If you see suspected LBAM symptoms please contact the Nevada Dept. of Agriculture. Thank you for your cooperation.

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